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Communication proposal

Title:	Finger games to improve basic numerical skills in preschool children as a precursor of arithmetic learning later
List of authors (with affiliation):	Neveu Maëlle, Vossius Line, Maillart Christelle, Binamé Florence, Jidovsteff Boris & Rousselle Laurence ULiège, Research Unit 'Enfances'
Abstract:	When children start preschool their existing numerical ability varies considerably. One of the school mission is to reduce these inequalities in children's knowledge (Ramani & Siegler, 2008). In different countries, numerical learning is increasingly highlighted in preschool programs and has become one of the national (Starkey, Klein, & Wakeley, 2004; Villani & Torossian, 2018). Indeed, many authors have shown a strong relationship between numerical knowledge of preschool and the arithmetical performance later (Jordan, Kaplan, Ramineni, & Locuniak, 2009). Moreover, early intervention targeting individual strengths and weaknesses were found to be the most efficient to reduce the prevalence of learning disabilities (Vellutino & Scanlon, 2002). In this study, 85 preschoolers aged between 48 and 60 months old were randomly divided into three groups: 27 benefitted from a numerical program based on finger game activities targeting precursors in the development of early mathematical skills (fingers used as a tool to represent the cardinal value of numbers), a pedagogical intervention for ten weeks, thirty minutes a day, five times a week. 28 benefitted from a shared reading program targeting precursors in the development of reading and writing skills, which was our academic control group. Finally, 29 participated in a global motor training, which was our non-academic control group. The age, the socio-economic level, the language spoken at home and a non-verbal reasoning measure were controlled. In the short-term, first results showed that children in the numerical program improved their performances in cardinality processing more than others, particularly using number gestures. Children in the numerical training group exhibited larger improvement in arithmetical skills (not trained in the program) than other groups.
Keywords:	finger counting, early intervention, preschool
3 to 5 References (APA Style)	Jordan, N. C., Kaplan, D., Ramineni, C., & Locuniak, M. N. (2009). Early Math Matters: Kindergarten Number Competence and Later Mathematics Outcomes, *45*(3), 850–867. https://doi.org/10.1037/a0014939.Early

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Name + e-mail address of the corresponding author:	Neveu Maëlle Mail : mneveu@uliege.be